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SUPERFUND DIVISION

Ambient Air Monitoring Report

***National Industries, Inc. Reclamation Area Site
Park Hills, Missouri***

***Prepared for
The Doe Run Company***

July 2012



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Superfund

DUOZ

October 10, 2012

Mr. Mark Nations
The Doe Run Company
P.O. Box 1633
Desloge, Missouri 63601

Re: Ambient Air Monitoring Report – National Site

Dear Mr. Nations:

Please find attached the July 2012 “*Ambient Air Monitoring Report*” for The Doe Run Company at the National Industries, Inc. Reclamation Area Sites, located near Park Hills, Missouri.

This report will include the following:

- **Glossary of Terms** – Listing of the abbreviations used for each parameter and unit.
- **Ambient Air Quality Standards** – Lists the maximum allowable concentrations for the measured parameters.
- **TSP, Lead & PM₁₀ Particulate Summaries** – Includes the averages of each monitored parameter, which relates to the federal standards.
- **Particulate and Lead Analysis Spreadsheets**.
- **Lab Results (lead & cadmium)** – Lab reports from Inovatia Laboratories, LLC.
- **Meteorological Data Printouts** – This supplies printouts of each parameter.

Barr Engineering Company offers this report as an independent laboratory. This includes the weighing of filters, obtaining lead and cadmium analysis, compiling the data, and preparing the report. No interpretation of the data or analysis of the results is implied or intended. Should you have any questions regarding this report, please call.

Respectfully,



Richard J. Campbell, PE
Chemical Engineer
Senior Environmental Consultant

c: Kathy Rangen
Jason Gunter
Ty Morris
Kevin Lombardozzi

GLOSSARY OF TERMS

$\mu\text{g}/\text{m}^3$	Micrograms per Cubic Meter
mph	Miles per Hour
Wind Direction	Degrees from True North
TSP	Total Suspended Particulate
PM ₁₀	Particulate Matter - 10 Microns or Less
mmHg	Millimeters of Mercury

NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

PM ₁₀ – Particulate Matter	24-Hour*	Annual Maximum	150 $\mu\text{g}/\text{m}^3$
Lead	Calendar Quarter	Arithmetic Mean	1.5 $\mu\text{g}/\text{m}^3$
Lead	Rolling 3-Month Average	Arithmetic Mean	0.15 $\mu\text{g}/\text{m}^3$

TSP (Total Suspended Particulate) – There are no Federal Standards that apply solely for TSP.

*This standard must be exceeded more than once a year to constitute a violation.

BARR**TSP and Lead Concentration Summary**National
Park Hills, Missouri

2012

Date	TSP Big River #4 ($\mu\text{g}/\text{m}^3$)	TSP Ozark #1 ($\mu\text{g}/\text{m}^3$)	TSP Soccer #2 ($\mu\text{g}/\text{m}^3$)	TSP Water Plant #3 ($\mu\text{g}/\text{m}^3$)	LEAD Big River #4 ($\mu\text{g}/\text{m}^3$)	LEAD Ozark #1 ($\mu\text{g}/\text{m}^3$)	LEAD Soccer #2 ($\mu\text{g}/\text{m}^3$)	LEAD Water Plant #3 ($\mu\text{g}/\text{m}^3$)
7/2/12	54	39	43	INVALID	0.068	0.024	0.061	INVALID
7/3/12	71	51	52	57	0.045	0.009	0.023	0.031
7/5/12	71	52	60	89	0.050	0.014	0.057	0.048
7/6/12	47	37	36	37	0.034	0.011	0.020	0.019
7/9/12	44	31	34	33	0.011	0.000	0.011	0.009
7/10/12	40	33	37	34	0.012	0.000	0.022	0.009
7/11/12	44	37	39	34	0.013	0.009	0.016	0.007
7/12/12	36	26	30	25	0.020	0.000	0.024	0.000
7/13/12	28	21	22	39	0.020	0.006	0.020	0.025
7/16/12	20	29	30	17	0.011	0.014	0.047	0.012
7/17/12	43	22	45	39	0.035	0.007	0.056	0.042
7/18/12	64	44	48	41	0.056	0.012	0.061	0.037
7/19/12	76	41	41	42	0.083	0.012	0.027	0.069
7/20/12	53	36	29	33	0.023	0.008	0.012	0.014
7/23/12	45	44	54	40	0.028	0.011	0.048	0.041
7/24/12	58	48	75	46	0.048	0.019	0.152	0.028
7/25/12	39	57	54	56	0.014	0.039	0.054	0.073
7/26/12	26	35	28	53	0.024	0.019	0.034	0.082
7/27/12	32	36	29	29	0.011	0.013	0.017	0.048
7/30/12	88	45	49	55	0.082	0.026	0.037	0.059
7/31/12	69	40	41	35	0.057	0.016	0.025	0.018
Monthly Average	50	38	42	42	0.035	0.013	0.039	0.034
June 2012					0.031	0.013	0.039	0.026
May 2012					0.024	0.016	0.034	0.029
Rolling 3-month Average					0.03	0.01	0.04	0.03
					3-month Average Lead NAAQS $\mu\text{g}/\text{m}^3$			
								0.15

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.



Particulate Summary

National
Park Hills, Missouri

2012

Date	PM ₁₀ Big River #4 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ Ozark #1 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ Soccer #2 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ Water Plant #3 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ NAAQS ($\mu\text{g}/\text{m}^3$)
2-Jul	24	19	19	17	150
5-Jul	39	32	34	37	150
8-Jul	20	23	21	33	150
11-Jul	26	22	22	23	150
14-Jul	10	10	9	8	150
17-Jul	17	19	18	19	150
20-Jul	23	18	18	19	150
23-Jul	31	25	30	28	150
26-Jul	15	19	16	26	150
29-Jul	14	12	11	10	150
Monthly Average	22	20	20	22	

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.

Particulate and Lead Analysis



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID: P4557

Big River Site #4- Primary

Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. μg	T _{av} C	P _{av} mmHg	P _r mmHg	Ratio P _r /P _{av}	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations TSP μg/m ³	Lead μg/m ³
7/2/2012	8593425	0.0926	118	27	743.7	36.4	0.951	1.249	1.214	23.70	1727	54	0.068
7/3/2012	8593416	0.1209	77	29	742.8	36.7	0.951	1.253	1.207	23.49	1701	71	0.045
7/5/2012	8593406	0.1162	83	33	743.1	37.1	0.950	1.213	1.158	23.71	1644	71	0.050
7/6/2012	8593598	0.0808	58	31	743.4	36.9	0.950	1.258	1.204	23.68	1711	47	0.034
7/9/2012	8593588	0.0755	19	25	744.2	36.2	0.951	1.247	1.219	23.71	1733	44	0.011
7/10/2012	8593578	0.0681	21	27	744.0	36.4	0.951	1.249	1.216	23.65	1725	40	0.012
7/11/2012	8593569	0.0767	23	26	744.5	36.2	0.951	1.247	1.219	23.68	1730	44	0.013
7/12/2012	8593559	0.0620	35	27	744.3	36.4	0.951	1.249	1.215	23.68	1727	36	0.020
7/13/2012	8593550	0.0483	35	28	744.7	36.3	0.951	1.248	1.217	23.65	1727	28	0.020
7/16/2012	8593540	0.0350	19	29	743.8	36.6	0.951	1.252	1.210	23.72	1722	20	0.011
7/17/2012	8593531	0.0737	59	30	742.3	36.8	0.950	1.254	1.205	23.66	1710	43	0.035
7/18/2012	8593522	0.1086	95	32	742.4	37.0	0.950	1.258	1.200	23.68	1705	64	0.056
7/19/2012	8593513	0.1226	134	33	742.2	37.2	0.950	1.203	1.144	23.53	1615	76	0.083
7/20/2012	8593503	0.0905	39	27	743.9	36.4	0.951	1.249	1.214	23.62	1721	53	0.023
7/23/2012	8594893	0.0745	46	32	745.4	37.1	0.950	1.230	1.177	23.62	1688	45	0.028
7/24/2012	8594884	0.0901	75	34	743.1	37.3	0.950	1.158	1.100	23.66	1561	58	0.048
7/25/2012	8594876	0.0601	21	34	740.3	37.3	0.950	1.145	1.082	23.57	1531	39	0.014
7/28/2012	8594885	0.0450	41	28	739.9	36.6	0.951	1.251	1.204	23.59	1704	26	0.024
7/27/2012	8594857	0.0547	19	29	742.3	36.6	0.951	1.252	1.207	23.61	1710	32	0.011
7/30/2012	8594848	0.1492	139	29	741.4	36.6	0.951	1.252	1.206	23.54	1703	68	0.062
7/31/2012	8594838	0.1182	97	29	742.1	36.7	0.951	1.253	1.205	23.68	1711	69	0.057

Data Captured	TSP	Lead
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

Monthly Average:	50	0.035
Standard Deviation:	18	0.023
Maximum:	68	0.083
Minimum:	20	0.011

NOTES

7/4/2012 - Holiday - No samples scheduled

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celsius

P_{av} = average station pressure in millimeters of mercury

P_r = ((Temp in Kelvin * Temp Slope) + Temp Int.) * 1.868

P_r = ((Temp in Kelvin * 0.0664) + (-0.4213)) * 1.868

P_r/P_{av} = pressure ratio of P_r and P_{av} = 1 - P_r/P_{av}

Q_a = look up table volumetric flow rate

Q_{std} = total sample volumetric flow rate corrected to standard conditions

V_{std} = total sample volume corrected to standard conditions

TSP = mass concentration in μg/std m³

Lead = mass concentration in μg/std m³



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P2939

National Site #1 Ozark Insulation

Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. μg	T _{av} C	P _{av} mmHg	P _r mmHg	Ratio P _r /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations TSP μg/m ³	Lead μg/m ³
7/2/2012	8593420	0.0663	42	27	743.7	36.4	0.951	1.245	1.210	23.68	1720	39	0.024
7/3/2012	8593411	0.0668	15	29	742.8	36.7	0.951	1.249	1.203	23.73	1713	51	0.009
7/5/2012	8593401	0.0845	23	33	743.1	37.1	0.950	1.211	1.153	23.43	1621	52	0.014
7/6/2012	8593599	0.0629	19	31	743.4	36.9	0.950	1.252	1.200	23.61	1700	37	0.011
7/9/2012	8593590	0.0541	< 10	25	744.2	36.2	0.951	1.243	1.215	23.73	1720	31	0.000
7/10/2012	8593573	0.0574	< 10	27	744.0	36.4	0.951	1.245	1.212	23.64	1719	33	0.000
7/11/2012	8593564	0.0636	15	26	744.5	36.2	0.951	1.243	1.215	23.68	1726	37	0.009
7/12/2012	8593554	0.0436	< 10	27	744.3	36.4	0.951	1.245	1.211	23.19	1688	26	0.000
7/13/2012	8593545	0.0355	10	26	744.7	36.3	0.951	1.244	1.213	23.58	1717	21	0.006
7/16/2012	8593535	0.0503	24	29	743.8	36.6	0.951	1.248	1.206	23.69	1714	29	0.014
7/17/2012	8593528	0.0371	11	30	742.3	36.8	0.950	1.250	1.201	23.71	1708	22	0.007
7/18/2012	8593517	0.0740	20	32	742.4	37.0	0.950	1.254	1.196	23.60	1694	44	0.012
7/18/2012	8593515	0.0852	20	33	742.2	37.2	0.950	1.201	1.142	23.24	1592	41	0.012
7/20/2012	8594898	0.0813	14	27	743.9	36.4	0.951	1.245	1.210	23.71	1722	38	0.008
7/23/2012	8594888	0.0735	19	32	745.4	37.1	0.950	1.227	1.174	23.69	1688	44	0.011
7/24/2012	8594879	0.0751	30	34	743.1	37.3	0.950	1.158	1.098	23.73	1585	48	0.019
7/25/2012	8594877	0.0878	60	34	740.3	37.3	0.950	1.145	1.082	23.65	1529	57	0.039
7/28/2012	8594860	0.0591	33	28	739.9	36.6	0.951	1.247	1.200	23.60	1689	35	0.019
7/27/2012	8594858	0.0610	22	29	742.3	36.8	0.951	1.248	1.203	23.70	1711	38	0.013
7/30/2012	8594849	0.0765	45	29	741.4	36.8	0.951	1.248	1.202	23.73	1711	45	0.026
7/31/2012	8594840	0.0676	28	29	742.1	36.7	0.951	1.249	1.201	23.74	1711	40	0.016

Data Captured	TSP	Lead
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

Monthly Average:	38	0.013
Standard Deviation:	10	0.009
Maximum:	57	0.039
Minimum:	21	0.000

NOTES

7/4/2012 - Holiday - No samples scheduled

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celsius

P_{av} = average station pressure in millimeters of mercury

P_r = ((Temp in °Kelvin * Temp Slope)+Temp Int.)*1.868

P_r = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868

P_r/P_a = pressure ratio of P_r and P_a = 1 - P_r/P_a

Q_a = look up table volumetric flow rate

Q_{std} = total sample volumetric flow rate corrected to standard conditions

V_{std} = total sample volume corrected to standard conditions

TSP = mass concentration in μg/std m³

Lead = mass concentration in μg/std m³



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P4474

National Site #2 - Soccer Field

Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. μg	T _{av} C	P _{av} mmHg	P _t mmHg	Ratio P _t /P _{av}	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations TSP μg/m ³	Lead μg/m ³
7/2/2012	8593421	0.0735	104	27	743.7	36.4	0.951	1.231	1.186	23.66	1698	43	0.081
7/3/2012	8593412	0.0879	38	29	742.8	36.7	0.951	1.234	1.189	23.51	1678	52	0.023
7/5/2012	8593402	0.0962	92	33	743.1	37.1	0.950	1.201	1.144	23.45	1609	60	0.057
7/6/2012	8593600	0.0807	34	31	743.4	36.9	0.950	1.238	1.186	23.51	1673	36	0.020
7/9/2012	8593591	0.0587	18	25	744.2	36.2	0.951	1.229	1.201	23.49	1692	34	0.011
7/10/2012	8593574	0.0826	38	27	744.0	36.4	0.951	1.230	1.188	23.78	1707	37	0.022
7/11/2012	8593565	0.0674	28	28	744.5	36.2	0.951	1.229	1.201	23.98	1728	39	0.018
7/12/2012	8593555	0.0503	40	27	744.3	36.4	0.951	1.231	1.197	23.22	1688	30	0.024
7/13/2012	8593548	0.0370	35	26	744.7	36.3	0.951	1.230	1.199	23.78	1711	22	0.020
7/16/2012	8593536	0.0509	81	29	743.8	36.6	0.951	1.234	1.192	23.83	1704	30	0.047
7/17/2012	8593527	0.0761	98	30	742.3	36.8	0.950	1.235	1.187	23.85	1699	45	0.056
7/18/2012	8593518	0.0808	103	32	742.4	37.0	0.950	1.239	1.182	23.75	1685	48	0.081
7/19/2012	8593516	0.0851	43	33	742.2	37.2	0.950	1.192	1.133	23.21	1578	41	0.027
7/20/2012	8594899	0.0492	21	27	743.9	36.4	0.951	1.231	1.196	23.94	1718	29	0.012
7/23/2012	8594889	0.0902	79	32	745.4	37.1	0.950	1.218	1.163	23.85	1684	54	0.048
7/24/2012	8594880	0.1186	239	34	743.1	37.3	0.950	1.153	1.095	23.87	1575	75	0.152
7/25/2012	8594878	0.0822	82	34	740.3	37.3	0.950	1.142	1.079	23.55	1525	54	0.054
7/26/2012	8594861	0.0473	57	28	739.9	36.6	0.951	1.233	1.188	23.47	1670	28	0.034
7/27/2012	8594859	0.0497	29	28	742.3	36.6	0.951	1.233	1.190	23.66	1690	29	0.017
7/30/2012	8594850	0.0819	82	29	741.4	36.6	0.951	1.233	1.188	23.57	1680	49	0.037
7/31/2012	8594841	0.0889	42	29	742.1	36.7	0.951	1.235	1.187	23.82	1683	41	0.025

Data Captured	TSP	Lead
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

Monthly Average:	42	0.039
Standard Deviation:	13	0.031
Maximum:	75	0.152
Minimum:	22	0.011

NOTES

7/4/2012 - Holiday - No samples scheduled

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celsius
 P_{av} = average station pressure in millimeters of mercury
 P_t = ((Temp in °Kelvin * Temp Slope) + Temp Int.) * 1.868
 P_t = ((Temp in °Kelvin * 0.0684) + (-0.4213)) * 1.868
 P_t/P_{av} = pressure ratio of P_t and P_{av} = 1 - P_t/P_{av}

Q_a = look up table volumetric flow rate
 Q_{std} = total sample volumetric flow rate corrected to standard conditions
 V_{std} = total sample volume corrected to standard conditions
 TSP = mass concentration in μg/std m³
 Lead = mass concentration in μg/std m³



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P4475

National Site Water Plant #3

Sample Date	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. µg	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _{av}	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations TSP µg/m ³	Lead µg/m ³
7/2/2012	8593423	0.0224	15	27	743.7	36.4	0.951	1.235	1.201	7.24	522	INVALID	INVALID
7/3/2012	8593414	0.0975	52	29	742.8	36.7	0.951	1.239	1.194	23.78	1704	57	0.031
7/5/2012	8593404	0.1447	78	33	743.1	37.1	0.950	1.207	1.149	23.66	1632	89	0.048
7/6/2012	8593596	0.0621	32	31	743.4	36.9	0.950	1.242	1.191	23.68	1692	37	0.019
7/9/2012	8593586	0.0568	15	25	744.2	36.2	0.951	1.233	1.205	23.69	1713	33	0.009
7/10/2012	8593576	0.0589	15	27	744.0	36.4	0.951	1.235	1.202	23.70	1709	34	0.009
7/11/2012	8593587	0.0575	11	26	744.5	36.2	0.951	1.233	1.205	23.65	1710	34	0.007
7/12/2012	8593557	0.0420	< 10	27	744.3	36.4	0.951	1.235	1.202	23.68	1708	25	0.000
7/13/2012	8593548	0.0665	43	26	744.7	36.3	0.951	1.235	1.204	23.68	1710	39	0.025
7/16/2012	8593538	0.0296	21	29	743.8	36.6	0.951	1.239	1.197	23.65	1698	17	0.012
7/17/2012	8593529	0.0659	71	30	742.3	36.8	0.950	1.240	1.192	23.72	1696	39	0.042
7/18/2012	8593520	0.0689	62	32	742.4	37.0	0.950	1.244	1.187	23.65	1684	41	0.037
7/19/2012	8593511	0.0686	111	33	742.2	37.2	0.950	1.199	1.140	23.61	1614	42	0.069
7/20/2012	8593501	0.0563	24	27	743.9	36.4	0.951	1.236	1.201	23.72	1709	33	0.014
7/23/2012	8594891	0.0662	68	32	745.4	37.1	0.950	1.221	1.168	23.69	1660	40	0.041
7/24/2012	8594882	0.0719	45	34	743.1	37.3	0.950	1.161	1.103	23.73	1570	46	0.028
7/25/2012	8594874	0.0869	113	34	740.3	37.3	0.950	1.150	1.087	23.61	1540	56	0.073
7/26/2012	8594863	0.0897	139	28	739.9	36.8	0.951	1.238	1.191	23.66	1691	53	0.082
7/27/2012	8594855	0.0486	82	29	742.3	36.6	0.951	1.238	1.194	23.67	1696	29	0.048
7/30/2012	8594846	0.0934	100	29	741.4	36.6	0.951	1.238	1.193	23.67	1694	55	0.059
7/31/2012	8594836	0.0596	31	29	742.1	36.7	0.951	1.240	1.192	23.72	1697	35	0.018

Data Captured	TSP	Lead
Valid Samples:	20	20
Scheduled Samples:	21	21
Percent Data Captured:	95%	95%

Monthly Average:	42	0.034
Standard Deviation:	15	0.024
Maximum:	89	0.082
Minimum:	17	0.000

NOTES

7/2/2012 - INVALID - Mechanical Failure
7/4/2012 - Holiday - No samples scheduled

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celsius

P_{av} = average station pressure in millimeters of mercury

P_f = (((Temp in °Kelvin * Temp Slope))+Temp Int.)*1.868

P_f = ((Temp in °Kelvin * 0.0684)+(-0.4213))*1.868

P_f/P_{av} = pressure ratio of P_f and P_{av} = 1 - P_f/P_{av}

Q_a = look up table volumetric flow rate

Q_{std} = total sample volumetric flow rate corrected to standard conditions

V_{std} = total sample volume corrected to standard conditions

TSP = mass concentration in µg/std m³

Lead = mass concentration in µg/std m³



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P6609

Big River Site #4 - QA

Sample Date	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. µg	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _{av}	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations TSP µg/m ³	Lead µg/m ³
7/3/2012	8593426	0.1245	75	29	742.8	36.7	0.951	1.244	1.199	23.67	1703	73	0.044
7/5/2012	8593407	0.1160	77	33	743.1	37.1	0.950	1.207	1.149	23.63	1629	71	0.047
7/10/2012	8593589	0.0671	21	27	744.0	36.4	0.951	1.240	1.207	23.65	1713	39	0.012
7/12/2012	8593580	0.0622	41	27	744.3	36.4	0.951	1.240	1.207	23.62	1710	36	0.024
7/17/2012	8593541	0.0719	63	30	742.3	36.8	0.950	1.245	1.197	23.66	1699	42	0.037
7/19/2012	8593514	0.1207	123	33	742.2	37.2	0.950	1.197	1.138	23.43	1600	75	0.077
7/24/2012	8594894	0.0858	71	34	743.1	37.3	0.950	1.154	1.096	23.56	1549	55	0.046
7/26/2012	8594866	0.0463	37	28	739.9	36.6	0.951	1.243	1.196	23.68	1699	27	0.022
7/31/2012	8594839	0.1110	86	29	742.1	36.7	0.951	1.245	1.197	23.50	1688	66	0.051

Valid Samples:	9	9
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Scheduled Samples:	9	9
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Percent Data Captured:	100%	100%
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Monthly Average:	54	0.040
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Standard Deviation:	18	0.019
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Maximum:	75	0.077
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Minimum:	27	0.012
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NOTES

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celsius

Q_a = look up table volumetric flow rate

P_{av} = average station pressure in millimeters of mercury

Q_{std} = total sample volumetric flow rate corrected to standard conditions

P_f = ((Temp in °Kelvin * Temp Slope))+Temp Int.)*1.868

V_{std} = total sample volume corrected to standard conditions

P_f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868

TSP = mass concentration in µg/std m³

P_f/P_{av} = pressure ratio of P_f and P_{av} = 1 - P_f/P_{av}

Lead = mass concentration in µg/std m³



PM₁₀ Analysis

The Doe Run Company

Big River Site #4- Primary																					
Sampler ID P2952		PM10 Filter Net Wt.	T _{av}	P _{av}	P _f	Ratio P _o /P _a	Q _a	Q _{std}	Elapsed Time	Sample Volume V _{std}	Mass Conc. PM ₁₀ µg/m ³										
Sample Date	Filter ID	g	C	mmHg	mmHg		m ³ /min	m ³ /min	hr	m ³											
7/2/2012	262847	0.0390	27	743.7	36.4	0.951	1.154	1.121	23.82	1603	24										
7/5/2012	262837	0.0605	33	743.1	37.1	0.950	1.154	1.099	23.64	1559	39										
7/8/2012	262827	0.0321	27	743.7	36.4	0.951	1.154	1.121	23.72	1596	20										
7/11/2012	262817	0.0408	28	744.5	36.2	0.951	1.152	1.128	23.58	1592	26										
7/14/2012	262808	0.0157	25	745.4	36.2	0.951	1.151	1.128	23.64	1599	10										
7/17/2012	264699	0.0268	30	742.3	36.8	0.950	1.158	1.113	23.63	1577	17										
7/20/2012	264688	0.0370	27	743.9	36.4	0.951	1.154	1.121	23.66	1592	23										
7/23/2012	264680	0.0488	32	745.4	37.1	0.950	1.157	1.107	23.61	1568	31										
7/26/2012	264669	0.0230	28	739.9	36.8	0.951	1.156	1.112	23.65	1578	15										
7/29/2012	264660	0.0219	23	744.9	36.0	0.952	1.149	1.131	23.84	1605	14										
Valid Samples:	10																				
Scheduled Samples:	10																				
Percent Data Captured:	100%																				



PM₁₀ Analysis

The Doe Run Company

SAMPLER ID P2950										National Site #1 Ozark Insulation			
Sample Date 2012	Filter ID	PM10 Net Wt. g	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _{av}	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ μg/m ³		
7/2/2012	262852	0.0305	27	743.7	36.4	0.951	1.151	1.119	23.93	1607	19		
7/5/2012	262842	0.0502	33	743.1	37.1	0.950	1.152	1.097	23.85	1557	32		
7/8/2012	262825	0.0364	27	743.7	36.4	0.951	1.151	1.119	23.73	1593	23		
7/11/2012	262815	0.0344	28	744.5	36.2	0.951	1.150	1.123	23.87	1596	22		
7/14/2012	262813	0.0163	25	745.4	36.2	0.951	1.149	1.125	23.68	1599	10		
7/17/2012	262804	0.0297	30	742.3	36.8	0.950	1.156	1.111	23.73	1581	19		
7/20/2012	264687	0.0285	27	743.9	36.4	0.951	1.152	1.119	23.66	1589	18		
7/23/2012	264685	0.0386	32	745.4	37.1	0.950	1.155	1.105	23.74	1573	25		
7/26/2012	264668	0.0303	28	739.9	36.6	0.951	1.153	1.110	23.70	1578	19		
7/29/2012	264659	0.0196	23	744.9	36.0	0.952	1.148	1.129	23.72	1607	12		
Valid Samples:	10	Scheduled Samples:	10	Percent Data Captured:	100%	Monthly Average:	20	Standard Deviation:	6	Maximum:	32	Minimum:	10
NOTES													
DEFINITIONS and CALCULATIONS													
T_{av} = average temperature in degrees Celsius P_{av} = average station pressure in millimeters of mercury $P_f = ((\text{Temp in } {}^{\circ}\text{Kelvin} * \text{Temp Slope}) + \text{Temp Int.}) * 1.868$ $P_f = ((\text{Temp in } {}^{\circ}\text{Kelvin} * 0.0664) + (-0.4213)) * 1.868$													
P_f/P_{av} = pressure ratio of P_f and P_{av} = $1 - P_f/P_{av}$ Q_a = look up table volumetric flow rate Q_{std} = sample volumetric flow rate corrected to standard conditions V_{std} = sample volume corrected to standard conditions													



PM₁₀ Analysis

The Doe Run Company

National Site #2 - Soccer Field													
Sampler ID	P2949	Sample Date	Filter ID	PM10 Filter Net Wt.	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _{av}	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ µg/m ³
7/2/2012	262851	0.0305	27	743.7	36.4	0.951	1.148	1.116	23.90	1601	19		
7/5/2012	262841	0.0538	33	743.1	37.1	0.950	1.149	1.095	23.78	1562	34		
7/8/2012	262824	0.0339	27	743.7	36.4	0.951	1.148	1.116	23.77	1592	21		
7/11/2012	262814	0.0349	26	744.5	36.2	0.951	1.147	1.121	23.76	1597	22		
7/14/2012	262812	0.0143	25	745.4	36.2	0.951	1.148	1.123	23.78	1602	9		
7/17/2012	262803	0.0287	30	742.3	36.8	0.950	1.153	1.108	23.75	1578	18		
7/20/2012	264686	0.0292	27	743.9	36.4	0.951	1.149	1.116	23.77	1592	18		
7/23/2012	264684	0.0468	32	745.4	37.1	0.950	1.152	1.102	23.72	1568	30		
7/26/2012	264667	0.0255	28	739.9	36.8	0.951	1.150	1.107	23.78	1580	16		
7/29/2012	264658	0.0178	23	744.9	36.0	0.952	1.143	1.128	23.77	1606	11		
Valid Samples:	10											Monthly Average:	20
Scheduled Samples:	10											Standard Deviation:	8
Percent Data Captured:	100%											Maximum:	34
												Minimum:	9

NOTES

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celcius
P_{av} = average station pressure in millimeters of mercury
P_f = ((Temp in °Kelvin * Temp Slope))+Temp Int.*1.868
P_f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868

P_f/P_{av} = pressure ratio of P_f and P_{av} = 1 - P_f/P_{av}
Q_a = look up table volumetric flow rate
Q_{std} = sample volumetric flow rate corrected to standard conditions
V_{std} = sample volume corrected to standard conditions



PM₁₀ Analysis

The Doe Run Company

SAMPLER ID P2951										National Site #3 - Water Plant			
Sample Date 2012	Filter ID	PM10 Filter Net Wt. g	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _o /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ µg/m ³		
7/2/2012	262849	0.0277	27	743.7	36.4	0.951	1.155	1.123	23.83	1605	17		
7/5/2012	262839	0.0580	33	743.1	37.1	0.950	1.157	1.102	23.51	1554	37		
7/8/2012	262829	0.0518	27	743.7	36.4	0.951	1.155	1.123	23.49	1582	33		
7/11/2012	262819	0.0363	26	744.5	36.2	0.951	1.153	1.127	23.45	1586	23		
7/14/2012	262810	0.0131	25	745.4	36.2	0.951	1.153	1.129	23.47	1590	8		
7/17/2012	262801	0.0297	30	742.3	36.8	0.950	1.159	1.113	23.47	1568	19		
7/20/2012	264890	0.0297	27	743.9	36.4	0.951	1.155	1.123	23.50	1583	19		
7/23/2012	264882	0.0434	32	745.4	37.1	0.950	1.159	1.109	23.49	1563	28		
7/26/2012	264671	0.0408	28	739.9	36.6	0.951	1.157	1.113	23.43	1565	26		
7/29/2012	264662	0.0161	23	744.9	36.0	0.952	1.150	1.132	23.46	1594	10		
Valid Samples:	10	Scheduled Samples:	10	Percent Data Captured:	100%	Monthly Average:	22	Standard Deviation:	9	Maximum:	37	Minimum:	8
NOTES													
DEFINITIONS and CALCULATIONS													
T_{av} = average temperature in degrees Celcius													
P_{av} = average station pressure in millimeters of mercury													
$P_f = ((Temp \text{ in } ^\circ\text{Kelvin} * \text{Temp Slope}) + \text{Temp Int.}) * 1.868$													
$P_f = ((Temp \text{ in } ^\circ\text{Kelvin} * 0.0684) + (-0.4213)) * 1.868$													
$P_o/P_a = \text{pressure ratio of } P_f \text{ and } P_{av} = 1 - P_f/P_{av}$													
$Q_a = \text{look up table volumetric flow rate}$													
$Q_{std} = \text{sample volumetric flow rate corrected to standard conditions}$													
$V_{std} = \text{sample volume corrected to standard conditions}$													



PM₁₀ Analysis

The Doe Run Company

Lab Results (Lead and Cadmium)



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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0686
Date Received: 07/18/12
Analysis Method: 40 CFR §50
Appendix G

Location **National**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123571	8593423	07/02/12	#3 East - WTP	15	< 10	07/31/12 - DS
123574	8593414	07/03/12	#3 East - WTP	52	< 10	07/31/12 - DS
123577	8593404	07/05/12	#3 East - WTP	78	< 10	07/31/12 - DS
123580	8593596	07/06/12	#3 East - WTP	32	< 10	07/31/12 - DS
123593	8593420	07/02/12	#1 Ozark	42	< 10	07/31/12 - DS
123594	8593421	07/02/12	#2 Soccer	104	< 10	07/31/12 - DS
123595	8593411	07/03/12	#1 Ozark	15	< 10	07/31/12 - DS
123596	8593412	07/03/12	#2 Soccer	38	< 10	07/31/12 - DS
123597	8593401	07/05/12	#1 Ozark	23	< 10	07/31/12 - DS
123598	8593402	07/05/12	#2 Soccer	92	< 10	07/31/12 - DS
123599	8593599	07/06/12	#1 Ozark	19	< 10	07/31/12 - DS
123600	8593600	07/06/12	#2 Soccer	34	< 10	07/31/12 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0717
Date Received: 07/27/12
Analysis Method: 40 CFR §50
Appendix G

Location **National**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123681	8593586	07/09/12	#3 East - WTP	15	< 10	08/01/12 - DS
123684	8593576	07/10/12	#3 East - WTP	15	< 10	08/01/12 - DS
123687	8593567	07/11/12	#3 East - WTP	11	< 10	08/01/12 - DS
123690	8593557	07/12/12	#3 East - WTP	< 10	< 10	08/01/12 - DS
123693	8593548	07/13/12	#3 East - WTP	43	< 10	08/01/12 - DS
123709	8593590	07/09/12	#1 Ozark	< 10	< 10	08/01/12 - DS
123710	8593591	07/09/12	#2 Soccer	18	< 10	08/01/12 - DS
123711	8593573	07/10/12	#1 Ozark	< 10	< 10	08/01/12 - DS
123712	8593574	07/10/12	#2 Soccer	38	< 10	08/02/12 - DS
123713	8593564	07/11/12	#1 Ozark	15	< 10	08/02/12 - DS
123714	8593565	07/11/12	#2 Soccer	28	< 10	08/02/12 - DS
123715	8593554	07/12/12	#1 Ozark	< 10	< 10	08/02/12 - DS
123716	8593555	07/12/12	#2 Soccer	40	< 10	08/02/12 - DS
123717	8593545	07/13/12	#1 Ozark	10	< 10	08/02/12 - DS
123718	8593546	07/13/12	#2 Soccer	35	< 10	08/02/12 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0745
Date Received: 08/03/12
Analysis Method: 40 CFR §50
Appendix G

Location National

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123801	8593538	07/16/12	#3 East - WTP	21	< 10	08/07/12 - DS
123804	8593529	07/17/12	#3 East - WTP	71	< 10	08/07/12 - DS
123807	8593520	07/18/12	#3 East - WTP	62	< 10	08/07/12 - DS
123810	8593511	07/19/12	#3 East - WTP	111	< 10	08/07/12 - DS
123813	8593501	07/20/12	#3 East - WTP	24	< 10	08/07/12 - DS
123829	8593535	07/16/12	#1 Ozark	24	< 10	08/07/12 - DS
123830	8593536	07/16/12	#2 Soccer	81	< 10	08/07/12 - DS
123831	8593526	07/17/12	#1 Ozark	11	< 10	08/07/12 - DS
123832	8593527	07/17/12	#2 Soccer	96	< 10	08/07/12 - DS
123833	8593517	07/18/12	#1 Ozark	20	< 10	08/07/12 - DS
123834	8593518	07/18/12	#2 Soccer	103	< 10	08/07/12 - DS
123835	8593515	07/19/12	#1 Ozark	20	< 10	08/07/12 - DS
123836	8593516	07/19/12	#2 Soccer	43	< 10	08/07/12 - DS
123837	8594898	07/20/12	#1 Ozark	14	< 10	08/07/12 - DS
123838	8594899	07/20/12	#2 Soccer	21	< 10	08/07/12 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0775
Date Received: 08/10/12
Analysis Method: 40 CFR §50
Appendix G

Location **National**

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123951	8594891	07/23/12	#3 East - WTP	68	< 10	08/14/12 - DS
123954	8594882	07/24/12	#3 East - WTP	45	< 10	08/14/12 - DS
123957	8594874	07/25/12	#3 East - WTP	113	< 10	08/14/12 - DS
123960	8594863	07/26/12	#3 East - WTP	139	< 10	08/21/12 - DS
123963	8594855	07/27/12	#3 East - WTP	82	< 10	08/21/12 - DS
123966	8594846	07/30/12	#3 East - WTP	100	< 10	08/21/12 - DS
123969	8594836	07/31/12	#3 East - WTP	31	< 10	08/14/12 - DS
123992	8594888	07/23/12	#1 Ozark	19	< 10	08/14/12 - DS
123993	8594889	07/23/12	#2 Soccer	79	< 10	08/14/12 - DS
123994	8594879	07/24/12	#1 Ozark	30	< 10	08/14/12 - DS
123995	8594880	07/24/12	#2 Soccer	239	< 10	08/14/12 - DS
123996	8594877	07/25/12	#1 Ozark	60	< 10	08/14/12 - DS
123997	8594878	07/25/12	#2 Soccer	82	< 10	08/14/12 - DS
123998	8594860	07/26/12	#1 Ozark	33	< 10	08/14/12 - DS
123999	8594861	07/26/12	#2 Soccer	57	< 10	08/21/12 - DS
124000	8594858	07/27/12	#1 Ozark	22	< 10	08/21/12 - DS
124001	8594859	07/27/12	#2 Soccer	29	< 10	08/21/12 - DS
124002	8594849	07/30/12	#1 Ozark	45	< 10	08/21/12 - DS
124003	8594850	07/30/12	#2 Soccer	62	< 10	08/21/12 - DS
124004	8594840	07/31/12	#1 Ozark	28	< 10	08/21/12 - DS
124005	8594841	07/31/12	#2 Soccer	42	< 10	08/21/12 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0686
Date Received: 07/18/12
Analysis Method: 40 CFR §50
Appendix G

Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123563	8593425	07/02/12	#4 Primary	118	< 10	07/31/12 - DS
123564	8593416	07/03/12	#4 Primary	77	< 10	07/31/12 - DS
123565	8593426	07/03/12	#4 QA	75	< 10	07/31/12 - DS
123566	8593406	07/05/12	#4 Primary	83	< 10	07/31/12 - DS
123567	8593407	07/05/12	#4 QA	77	< 10	07/31/12 - DS
123568	8593598	07/06/12	#4 Primary	58	< 10	07/31/12 - DS

Submitted by: _____


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on Inovatia
Laboratories, LLC, our Managing
Partner, email=jbwiegner@inovatia.
com, on-US
Date: 2012.08.02 14:40:21 -05'00'

8/2/12

Date

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120 East Davis Street
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Fayette, MO 65248-0030

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0717
Date Received: 07/27/12
Analysis Method: 40 CFR §50
Appendix G
Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123672	8593588	07/09/12	#4 Primary	19	< 10	08/01/12 - DS
123673	8593578	07/10/12	#4 Primary	21	< 10	08/01/12 - DS
123674	8593589	07/10/12	#4 QA	21	< 10	08/01/12 - DS
123675	8593569	07/11/12	#4 Primary	23	< 10	08/01/12 - DS
123676	8593559	07/12/12	#4 Primary	35	< 10	08/01/12 - DS
123677	8593560	07/12/12	#4 QA	41	< 10	08/01/12 - DS
123678	8593550	07/13/12	#4 Primary	35	< 10	08/01/12 - DS

Digitally signed by Jennifer
Vandelicht
DN: cn=Jennifer Vandelicht,
o=Inovatia Laboratories, LLC,
ou=Quality Assurance,
email=jvandelicht@inovatia.
com, c=US
Date: 2012.08.02 16:31:44
-05'00'

Submitted by: _____

8/2/12

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0745
Date Received: 08/03/12
Analysis Method: 40 CFR §50
Appendix G
Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123792	8593540	07/16/12	#4 Primary	19	< 10	08/07/12 - DS
123793	8593531	07/17/12	#4 Primary	59	< 10	08/07/12 - DS
123794	8593541	07/17/12	#4 QA	63	< 10	08/07/12 - DS
123795	8593522	07/18/12	#4 Primary	95	< 10	08/07/12 - DS
123796	8593513	07/19/12	#4 Primary	134	< 10	08/07/12 - DS
123797	8593514	07/19/12	#4 QA	123	< 10	08/07/12 - DS
123798	8593503	07/20/12	#4 Primary	39	< 10	08/07/12 - DS

Digitally signed by Jennifer
Vandelicht
DN: cn=Jennifer Vandelicht,
o=Inovatia Laboratories, LLC,
ou=Quality Assurance,
email=jvandelicht@inovatia.
com, o=DS
Date 2012.08.08 16:19:21
-05'00'

Submitted by: _____

8/8/12

Date

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0775
Date Received: 08/10/12
Analysis Method: 40 CFR §50
Appendix G

Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123939	8594893	07/23/12	#4 Primary	46	< 10	08/21/12 - DS
123940	8594884	07/24/12	#4 Primary	75	< 10	08/21/12 - DS
123941	8594894	07/24/12	#4 QA	71	< 10	08/21/12 - DS
123942	8594876	07/25/12	#4 Primary	21	< 10	08/21/12 - DS
123943	8594865	07/26/12	#4 Primary	41	< 10	08/21/12 - DS
123944	8594866	07/26/12	#4 QA	37	< 10	08/21/12 - DS
123945	8594857	07/27/12	#4 Primary	19	< 10	08/21/12 - DS
123946	8594848	07/30/12	#4 Primary	139	< 10	08/21/12 - DS
123947	8594838	07/31/12	#4 Primary	97	< 10	08/21/12 - DS
123948	8594839	07/31/12	#4 QA	86	< 10	08/21/12 - DS

Submitted by: _____

Jennifer Vandelicht
Digitally signed by Jennifer
Vandelicht
DN: cn=Jennifer.Vandelicht,
o=Inovatia Laboratories, LLC,
ou=Quality Assurance,
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c=US
Date: 2012.08.22 09:52:04 -05'00'

8/22/12

Date

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Meteorological Data

Meteorological Report

The Doe Run Company

Wind Speed

Site Name: Rivermines

Average Interval: 01 Hour

Units: mph

Sampling Frequency: 01 Second

2012	Hour	24 Hour Avg																									
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max
1-Jul	0.2	0.7	1.0	0.2	0.9	0.3	0.5	1.4	1.9	3.5	3.3	3.5	3.1	3.2	3.8	4.8	5.9	5.4	3.7	2.4	1.5	2.4	1.7	0.9	5.9	2.3	
2-Jul	0.2	0.0	0.2	0.3	0.4	0.3	0.3	1.1	2.2	4.9	4.8	3.5	8.2	6.4	2.2	1.8	2.0	1.4	0.2	0.7	1.5	0.9	1.8	0.7	8.2	1.9	
3-Jul	1.2	0.6	0.7	1.0	1.4	0.4	0.2	0.7	1.6	2.6	3.8	3.3	3.6	4.2	9.0	8.2	6.0	6.4	7.1	5.5	5.0	3.6	3.2	3.3	9.0	3.4	
4-Jul	1.0	0.1	0.0	0.4	0.7	0.4	0.8	1.4	2.5	2.7	3.8	3.8	3.9	4.0	3.0	2.4	2.7	2.1	0.4	0.8	2.2	4.3	1.0	0.3	4.3	1.9	
5-Jul	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.6	2.7	6.0	6.1	4.5	2.9	4.0	3.2	2.9	3.9	3.9	3.0	0.6	2.2	0.5	0.1	0.0	6.1	2.1
6-Jul	0.3	0.0	0.3	0.4	0.1	0.1	0.5	0.5	1.3	2.3	2.8	3.0	4.8	6.7	4.1	2.4	4.0	2.7	1.0	0.7	1.3	0.1	0.0	0.1	6.7	1.7	
7-Jul	0.8	0.4	0.3	0.9	0.2	0.0	0.1	0.8	0.9	2.0	2.6	3.6	3.4	5.2	4.8	4.8	4.1	7.5	4.4	4.7	1.8	0.7	0.8	1.5	7.5	2.3	
8-Jul	1.1	1.7	1.1	1.5	0.5	1.0	0.9	1.9	1.1	1.6	1.4	1.2	2.2	0.6	2.3	5.5	2.8	2.2	4.7	2.1	2.6	1.5	2.4	1.5	5.5	5.5	1.9
9-Jul	1.6	1.3	0.1	0.4	0.5	0.1	0.9	1.7	3.0	2.3	3.9	3.5	3.7	3.5	4.0	4.4	4.2	4.9	2.4	0.2	0.3	0.1	0.8	0.3	4.9	2.0	
10-Jul	0.8	0.2	0.2	0.2	0.1	0.1	0.1	2.3	3.9	4.7	5.2	5.0	5.7	5.6	5.3	5.5	5.4	4.7	3.3	0.8	0.2	0.2	0.3	0.4	5.7	2.5	
11-Jul	0.2	0.1	0.2	0.5	0.3	0.2	0.2	2.3	2.4	2.7	3.4	4.3	5.0	5.7	5.3	4.6	3.4	3.3	0.1	0.5	0.3	0.1	0.2	0.8	5.7	1.9	
12-Jul	0.8	0.5	0.2	0.1	0.1	0.6	0.4	0.4	2.3	3.3	4.9	4.6	5.2	6.0	6.1	5.4	5.3	5.9	4.3	1.3	0.1	0.0	0.2	0.0	6.1	2.4	
13-Jul	0.1	0.3	0.1	0.1	0.0	0.0	0.8	2.6	1.7	2.0	2.5	3.4	3.6	3.9	4.8	4.8	2.8	3.3	3.4	0.4	0.5	1.8	2.7	1.1	4.8	1.9	
14-Jul	0.8	0.2	0.5	0.2	0.3	0.0	0.3	2.8	3.8	4.5	5.1	4.1	3.0	3.0	2.0	5.6	5.0	4.8	3.2	2.4	0.4	0.5	2.7	0.4	5.6	2.3	
15-Jul	1.3	1.2	0.6	0.9	0.8	0.7	0.5	0.8	1.1	2.8	3.4	5.4	4.6	6.0	4.9	5.3	5.0	6.1	6.0	4.4	4.4	4.9	4.8	1.3	6.1	3.2	
16-Jul	1.2	1.3	0.7	1.0	1.8	1.2	2.4	5.4	4.5	3.6	5.7	5.4	3.3	4.5	5.3	4.3	5.0	5.3	3.0	3.5	3.4	3.1	3.2	2.5	5.7	3.4	
17-Jul	2.0	2.2	1.9	2.2	0.7	0.1	0.6	1.7	2.1	2.8	3.1	3.3	2.6	6.9	6.5	5.3	5.8	5.5	3.9	4.5	4.9	3.3	1.5	1.3	6.9	3.1	
18-Jul	0.7	0.5	0.2	0.4	0.4	0.2	0.8	1.4	2.4	3.2	3.3	3.3	4.4	3.7	3.7	3.2	6.8	6.7	5.0	4.3	6.1	2.5	4.1	5.1	6.8	3.0	
19-Jul	3.1	1.9	2.0	1.2	1.9	1.5	1.3	2.0	3.0	4.2	5.3	5.0	4.2	4.1	4.1	3.3	4.1	2.0	1.1	0.3	0.2	2.1	1.0	0.2	5.3	2.5	
20-Jul	0.4	0.2	0.4	0.3	0.4	2.7	4.6	4.6	5.2	6.7	6.5	6.6	7.3	8.4	8.8	8.1	7.5	6.8	5.3	4.0	2.2	0.4	0.9	0.1	8.8	4.1	
21-Jul	0.1	0.4	0.3	0.9	0.2	0.5	1.1	3.5	4.4	5.1	4.5	5.9	5.3	4.9	4.9	4.7	4.4	3.8	2.5	0.5	0.1	0.4	0.2	0.3	5.9	2.5	
22-Jul	0.2	0.4	0.5	0.4	0.4	0.5	0.5	0.8	1.2	3.6	3.4	3.1	3.6	3.8	5.8	5.3	5.5	4.8	4.6	3.8	3.9	4.9	5.2	4.0	5.8	2.9	
23-Jul	3.0	1.4	3.0	2.5	0.9	0.5	3.3	3.7	4.2	3.7	3.1	4.4	4.6	4.6	4.5	5.3	4.8	5.9	5.9	4.8	5.6	6.6	5.2	3.5	6.6	4.0	
24-Jul	3.5	2.8	2.9	3.7	3.2	2.5	3.1	3.6	3.1	4.2	3.2	3.7	2.6	3.2	3.5	2.6	3.7	4.0	2.8	4.0	5.9	6.8	5.5	4.7	6.8	3.7	
25-Jul	2.3	3.0	2.6	3.4	2.7	3.0	3.4	3.1	3.0	2.8	5.7	6.8	7.3	8.1	7.4	8.4	8.1	6.9	5.8	7.0	9.4	8.1	9.7	8.2	9.7	5.7	
26-Jul	5.7	5.3	5.6	5.4	4.4	2.0	1.3	1.7	2.8	2.2	3.2	3.5	2.1	2.6	5.7	5.2	3.2	0.4	1.9	2.4	1.9	1.2	1.2	0.2	5.7	3.0	
27-Jul	1.8	2.2	2.1	1.4	0.1	0.5	1.4	2.1	2.3	2.7	3.5	4.1	4.9	3.9	4.3	4.7	5.6	5.5	6.2	1.2	0.0	0.1	0.1	0.3	6.2	2.5	
28-Jul	0.3	0.3	0.3	0.1	0.3	0.2	0.1	0.8	2.5	3.7	4.4	6.1	5.5	6.1	5.8	5.4	6.5	5.7	3.1	0.5	0.6	0.1	0.0	0.7	6.5	2.5	
29-Jul	0.1	0.2	0.4	0.4	0.5	0.6	0.5	1.8	3.6	0.8	2.9	4.6	4.3	6.7	6.8	7.0	6.4	6.5	5.0	3.6	2.1	2.1	2.3	3.3	7.0	3.0	
30-Jul	3.7	4.6	6.2	7.2	4.7	3.0	3.4	2.9	2.1	5.4	5.2	6.2	6.3	6.1	4.7	2.7	3.3	1.7	2.0	0.4	1.2	0.5	0.4	0.1	7.2	3.5	
31-Jul	0.5	0.7	0.3	0.1	0.6	0.0	0.2	0.3	2.2	3.0	4.0	3.1	2.7	2.9	2.9	3.3	2.2	2.2	2.5	1.9	1.2	0.8	2.3	1.9	4.0	1.7	

Meteorological Report

The Doe Run Company

Wind Direction

Site Name: Rivermines

Average Interval: 01 Hour

Units: Degrees

Sampling Frequency: 01 Second

2012	Hour																								
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	24 Hour Avg
1-Jul	208	89	174	197	218	203	280	280	289	307	288	310	272	307	262	5	108	108	149	83	85	230	183	189	198
2-Jul	189	217	176	193	217	185	237	273	283	8	104	97	151	232	231	188	284	228	214	207	209	10	27	197	181
3-Jul	211	306	205	227	234	201	271	257	259	274	279	281	287	233	171	164	162	171	187	190	197	190	201	223	224
4-Jul	240	206	200	199	209	214	250	268	275	272	302	321	282	252	226	255	261	230	120	140	160	192	227	209	230
5-Jul	184	118	198	193	192	189	248	257	298	328	346	21	22	359	302	68	18	49	85	58	136	136	214	226	177
6-Jul	200	198	187	196	194	222	239	270	286	39	356	20	40	165	187	201	256	234	263	229	206	208	201	200	200
7-Jul	191	220	210	195	192	189	267	257	25	27	72	67	61	103	139	207	231	230	236	351	358	239	190	185	185
8-Jul	223	219	228	236	198	213	228	212	218	353	302	290	355	32	85	185	313	9	86	90	188	251	38	202	197
9-Jul	253	356	219	240	178	195	198	344	353	14	12	16	18	60	5	25	22	18	27	48	201	200	198	184	141
10-Jul	188	192	184	187	204	229	214	26	57	43	80	64	61	47	63	60	88	65	73	78	201	196	200	184	123
11-Jul	189	200	198	185	192	194	228	15	1	8	87	74	54	39	59	66	130	142	226	210	202	353	164	181	141
12-Jul	250	183	186	185	183	198	229	314	3	46	54	68	64	64	76	66	85	134	133	143	165	235	192	195	144
13-Jul	194	184	187	189	196	187	264	194	250	42	103	75	60	98	119	124	104	125	167	187	283	260	148	219	165
14-Jul	256	206	184	210	229	191	233	212	212	177	175	198	227	224	143	173	180	175	172	173	180	145	181	209	194
15-Jul	128	209	183	174	321	199	323	300	354	41	121	155	165	188	181	193	170	184	176	171	184	190	192	226	197
16-Jul	179	177	177	174	199	199	213	221	225	222	184	189	189	207	214	219	206	224	210	228	217	215	214	210	204
17-Jul	214	210	221	229	212	209	249	252	272	280	275	252	256	192	180	163	152	159	151	157	189	180	215	241	212
18-Jul	226	151	118	191	180	216	254	280	278	289	300	264	289	242	272	263	109	151	147	112	171	203	147	175	209
19-Jul	193	222	229	206	200	247	256	251	260	291	299	301	288	281	307	286	302	280	259	236	217	49	281	209	248
20-Jul	214	217	199	197	249	345	15	8	12	358	11	18	8	5	9	19	9	17	11	22	18	28	26	33	85
21-Jul	191	192	189	178	181	191	75	68	58	57	72	32	46	52	63	43	45	46	37	72	117	183	194	186	107
22-Jul	187	186	184	181	193	201	266	12	105	161	134	103	133	89	146	137	160	157	165	166	165	185	192	203	159
23-Jul	222	213	219	212	202	199	220	243	237	245	239	220	215	204	198	214	224	211	206	199	183	207	216	218	215
24-Jul	213	215	226	233	238	240	248	255	273	300	306	318	284	216	212	240	223	223	235	203	199	197	205	210	238
25-Jul	213	217	228	236	237	239	245	252	269	267	222	208	220	209	222	217	219	219	218	216	198	197	197	198	223
26-Jul	215	219	222	232	237	261	259	281	323	1	220	132	214	277	300	147	207	237	161	205	188	194	213	214	215
27-Jul	248	237	225	238	195	186	241	249	249	253	256	253	245	263	268	231	290	298	328	356	205	197	211	181	246
28-Jul	191	193	185	187	182	187	219	329	8	356	336	339	5	4	20	12	13	29	23	36	94	200	194	147	147
29-Jul	204	184	203	215	326	221	184	65	65	183	168	150	138	169	167	195	176	170	160	156	149	145	148	152	171
30-Jul	160	178	191	193	184	169	177	208	263	327	351	349	13	15	18	36	20	9	14	3	8	48	193	224	139
31-Jul	195	206	204	194	189	234	226	328	12	359	13	351	44	13	332	325	341	349	155	166	185	308	234	236	216



Total Hours in Month	744
Valid Hours	744
Percent Data Captured	100.0%

Meteorological Report
The Doe Run Company
 $\Sigma\theta$

Site Name: Rivermiles

Average Interval: 01 Hour
 Units: Degrees

2012	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	24 Hour Avg
Day																										
1-Jul	6.4	9.6	16.1	1.7	16.6	16.1	23.0	38.2	44.9	40.4	50.3	46.7	54.4	53.5	43.3	49.8	31.0	31.9	41.3	38.2	26.3	35.1	42.9	8.0	32	
2-Jul	3.8	0.4	6.4	6.4	12.1	4.6	12.3	38.6	42.9	29.6	26.8	36.0	29.8	36.5	33.2	42.0	41.5	32.8	6.8	8.5	18.0	15.2	34.8	25.6	23	
3-Jul	25.8	9.9	16.9	18.5	15.6	14.6	11.0	28.2	39.7	51.1	48.5	46.4	49.2	43.6	24.2	27.9	29.7	24.7	22.4	19.0	18.5	20.1	19.0	21.3	27	
4-Jul	13.9	7.8	1.7	5.3	10.0	12.7	16.7	40.5	51.0	43.7	49.5	52.9	60.3	58.7	49.7	52.2	45.9	27.6	9.6	7.8	19.2	19.0	18.4	6.0	28	
5-Jul	1.1	1.7	0.4	0.8	0.2	0.5	18.7	33.8	43.4	29.7	27.5	45.5	66.7	40.9	50.9	50.9	42.4	27.9	32.6	17.9	21.7	6.3	1.1	4.9	24	
6-Jul	2.2	0.6	2.8	4.5	1.4	4.6	11.7	24.3	32.0	43.8	42.5	25.0	31.2	22.7	28.6	40.2	36.9	27.0	25.6	11.7	9.4	1.8	0.6	1.9	18	
7-Jul	13.4	8.7	8.0	35.5	1.8	0.6	9.9	32.6	36.8	36.4	52.9	48.6	47.8	37.1	44.9	37.9	35.9	44.8	37.9	60.8	42.2	21.5	14.1	19.7	30	
8-Jul	47.0	27.9	19.0	41.5	11.7	16.3	23.8	24.5	27.5	43.9	52.7	34.2	35.7	41.9	43.9	42.5	37.8	28.5	31.2	42.8	30.7	17.8	27.6	19.0	32	
9-Jul	16.8	37.6	2.4	16.6	7.9	2.3	19.1	31.5	30.2	54.0	31.6	36.9	27.6	40.3	22.3	32.0	26.3	26.0	23.0	7.1	1.5	0.3	2.0	2.8	21	
10-Jul	11.0	1.3	0.8	0.8	2.2	1.0	3.2	28.1	31.7	37.2	35.7	35.9	36.0	38.5	45.9	43.4	32.4	39.6	29.4	16.8	0.8	1.5	4.7	5.0	20	
11-Jul	2.7	1.2	4.7	8.8	5.7	8.8	22.0	31.0	42.9	53.8	42.4	37.7	37.7	43.7	37.7	33.0	26.8	8.8	18.5	2.8	6.0	7.0	19.7		21	
12-Jul	38.8	5.4	2.8	1.2	1.8	12.2	16.5	26.5	28.6	45.1	35.4	41.2	36.1	38.3	36.1	39.6	33.4	28.6	26.5	14.9	3.8	0.8	13.6	0.6	22	
13-Jul	0.7	3.7	1.4	0.4	1.2	0.3	21.1	31.8	62.2	38.4	65.3	41.1	40.9	43.6	31.2	33.9	30.7	29.8	23.1	10.6	12.7	32.4	18.2	28.9	25	
14-Jul	14.9	8.4	5.2	5.8	3.2	2.7	14.7	23.1	31.6	33.5	28.6	29.6	31.2	34.8	41.3	25.4	23.0	23.4	20.4	20.8	5.2	8.8	17.2	12.1	19	
15-Jul	11.1	37.1	11.0	9.4	47.2	20.6	11.3	45.8	39.3	40.7	45.6	45.3	55.8	44.4	41.0	30.0	32.6	26.4	25.1	20.4	17.9	19.3	20.0	24.3	30	
16-Jul	12.9	11.0	11.6	9.7	11.4	24.5	25.0	30.4	25.8	33.1	34.3	36.5	39.0	39.0	42.9	28.4	25.3	44.2	24.6	19.7	16.8	13.0	14.7		24	
17-Jul	16.3	15.3	17.8	18.1	7.5	3.7	24.3	30.4	42.9	45.8	60.4	52.6	49.3	35.4	22.8	26.1	27.9	23.6	28.2	23.1	20.6	24.3	16.9	17.3	27	
18-Jul	11.5	11.1	3.7	3.3	5.8	8.8	27.5	45.1	51.9	46.9	47.6	49.8	61.0	38.0	48.3	57.6	37.2	24.9	49.9	30.6	24.7	24.5	26.9	24.3	32	
19-Jul	27.7	19.1	18.9	13.8	11.2	32.6	28.8	38.7	39.0	44.2	42.5	43.3	49.7	45.7	44.3	43.8	40.2	38.0	31.8	8.7	5.7	33.0	26.1	5.1	30	
20-Jul	13.1	4.0	5.0	7.0	21.5	17.7	23.9	26.1	27.8	27.0	29.3	30.1	26.0	24.9	25.2	27.8	25.7	25.6	23.8	19.8	20.1	13.8	22.8	8.0	21	
21-Jul	1.2	3.0	1.8	5.5	1.4	4.8	31.7	31.4	39.2	38.9	44.2	39.8	45.6	42.4	40.1	37.4	34.0	32.9	28.5	16.9	4.9	2.0	1.2	2.8	22	
22-Jul	1.9	5.7	10.1	9.9	7.5	14.0	23.7	31.5	51.1	41.6	47.7	52.3	60.2	57.4	35.1	37.1	37.8	28.2	22.1	18.4	18.2	17.6	18.6	21.3	28	
23-Jul	21.9	11.8	19.0	15.3	7.3	4.6	22.3	31.0	35.8	39.7	52.3	37.9	48.0	54.8	40.8	33.3	29.1	25.9	21.8	17.5	18.8	20.3	20.8	19.8	27	
24-Jul	15.9	17.4	22.6	23.8	23.5	21.9	29.0	41.6	47.4	43.9	50.4	49.5	54.4	39.1	58.3	37.9	37.3	27.9	22.9	16.0	18.4	20.9	21.0	20.8	32	
25-Jul	17.4	17.1	23.2	19.9	20.4	22.2	30.0	42.4	45.2	48.4	37.5	32.5	36.3	30.4	34.8	28.2	24.4	26.3	21.7	18.9	19.8	20.3	20.7	21.9	27	
26-Jul	22.8	28.6	25.5	25.2	26.0	32.6	32.2	33.2	38.8	57.2	35.3	38.1	50.6	45.5	38.7	34.4	25.6	15.8	22.4	21.4	19.7	7.8	14.9	4.4	29	
27-Jul	12.7	17.1	15.1	18.0	2.3	4.9	22.0	35.5	35.5	39.3	40.6	43.4	40.0	45.7	42.7	25.9	39.6	40.1	19.3	17.1	0.8	0.7	5.4	1.8	24	
28-Jul	2.8	8.7	1.8	1.0	3.5	4.6	6.0	33.1	38.4	40.8	36.2	29.8	37.0	34.1	36.4	32.3	28.1	31.0	24.0	14.0	15.9	1.0	1.0	9.0	20	
29-Jul	1.9	3.3	5.5	8.9	30.1	16.9	10.6	41.2	43.1	15.7	33.0	32.0	31.0	31.9	29.8	27.8	26.7	25.1	25.7	26.3	25.9	23.9	27.0	25.5	24	
30-Jul	29.9	29.1	25.4	24.5	21.8	20.8	22.2	34.3	47.3	33.4	27.4	29.3	30.5	27.5	34.1	24.7	24.4	16.3	20.0	25.0	12.0	24.3	20.9	0.9	25	
31-Jul	3.8	7.9	4.5	1.9	10.6	0.1	12.1	17.2	43.6	31.3	34.7	38.3	64.9	46.1	46.5	62.1	58.8	28.9	29.7	24.8	28.0	29.0	33.4	20.6	28	

BARR	Total Hours in Month	744
	Valid Hours	744
	Percent Data Captured	100.0%

Meteorological Report
The Doe Run Company
Temperature

Site Name: Rivermines

Average Interval: 01 Hour

Units: Deg. C

Sampling Frequency: 01 Second

2012	Hour	24 Hour																									
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max
1-Jul	27	25	24	23	22	23	27	31	34	37	38	38	39	40	40	38	34	30	28	27	26	26	25	24	24	40.4	30.3
2-Jul	23	22	22	21	21	22	28	30	32	34	33	35	34	28	27	30	30	28	27	26	25	25	24	23	23	34.6	26.8
3-Jul	22	23	22	21	21	22	24	25	29	33	35	36	36	37	33	34	34	33	32	31	30	29	28	28	28	36.7	28.1
4-Jul	27	25	24	23	23	24	27	31	34	36	37	38	39	40	40	40	40	40	38	36	33	31	31	29	27	40.1	32.3
5-Jul	25	25	24	23	22	23	27	31	34	37	37	38	40	40	40	41	41	41	40	38	36	35	32	29	27	41.4	32.8
6-Jul	28	25	25	24	24	24	27	32	35	37	39	39	37	29	35	39	37	36	35	32	29	28	26	25	25	39.2	31.0
7-Jul	24	23	23	23	22	23	27	31	34	37	38	39	39	40	39	40	39	39	29	24	25	25	24	23	23	40.0	29.7
8-Jul	23	22	22	22	22	22	24	27	31	34	35	35	30	32	36	34	30	28	24	23	22	22	22	22	22	36.2	26.9
9-Jul	22	22	21	21	21	22	23	25	26	28	28	29	28	29	29	30	29	29	29	27	25	24	22	22	22	29.6	25.5
10-Jul	21	21	20	20	20	20	23	26	28	30	31	32	32	33	33	33	33	32	32	29	24	22	21	20	20	33.0	26.5
11-Jul	19	18	18	18	17	18	22	24	27	29	31	33	32	33	34	34	31	29	28	26	24	23	23	22	22	33.7	25.8
12-Jul	21	20	19	19	18	19	22	26	28	31	32	33	33	34	34	34	34	32	31	29	26	24	23	22	22	34.2	26.8
13-Jul	21	20	20	19	19	20	23	26	28	29	31	31	31	32	32	32	32	31	30	28	26	25	24	23	23	32.0	26.4
14-Jul	22	21	21	20	20	20	23	25	27	27	27	28	29	30	30	30	29	29	28	27	25	25	24	23	23	29.9	25.3
15-Jul	22	21	20	20	20	20	22	24	27	29	30	32	33	34	34	34	34	33	31	30	28	27	27	26	25	34.1	27.4
16-Jul	25	24	24	23	22	23	27	29	31	30	32	33	33	35	36	37	35	34	27	27	26	26	25	25	25	36.7	28.7
17-Jul	25	24	24	25	23	23	27	29	32	34	35	36	36	34	32	32	32	32	33	31	30	29	27	27	27	36.4	29.8
18-Jul	28	25	24	23	23	24	28	31	34	37	38	39	39	39	40	40	40	37	35	34	32	31	30	29	28	40.2	31.9
19-Jul	27	27	27	26	25	26	30	33	35	36	38	39	40	40	38	39	39	38	37	34	31	31	29	27	27	39.5	32.9
20-Jul	25	24	24	23	23	23	25	26	27	29	30	31	31	31	31	30	30	29	27	26	25	24	23	23	31.4	27.0	
21-Jul	21	20	19	18	18	18	22	25	26	27	29	30	31	31	31	31	30	30	29	27	26	25	24	23	21	33.5	25.9
22-Jul	19	18	17	17	17	17	21	26	30	32	34	34	36	36	37	37	36	36	34	32	30	29	29	28	28	36.9	28.5
23-Jul	27	26	26	25	24	24	28	31	33	35	36	37	38	39	39	39	39	38	36	34	33	31	30	29	29	38.3	32.5
24-Jul	28	28	28	28	27	27	29	32	34	36	38	38	39	39	40	40	40	40	39	38	35	34	33	31	30	40.0	33.7
25-Jul	28	28	28	28	27	27	30	33	35	37	38	39	40	40	40	40	39	38	37	35	33	32	31	30	40.3	33.9	
26-Jul	30	29	29	30	29	29	29	30	31	32	34	34	35	37	33	24	24	24	24	24	23	22	22	22	22	38.7	28.3
27-Jul	22	22	22	21	21	20	24	27	29	32	35	37	38	39	33	34	37	37	35	30	26	24	22	21	21	38.8	28.7
28-Jul	20	19	18	17	17	17	21	25	27	29	31	32	33	34	34	34	34	32	31	28	27	26	25	24	24	34.0	26.0
29-Jul	19	18	19	19	19	19	20	20	20	20	22	23	25	28	30	30	30	28	27	26	25	25	24	24	24	30.3	23.4
30-Jul	24	24	24	24	24	23	25	28	31	33	33	34	34	34	34	34	32	31	31	30	28	28	27	26	24	34.3	28.6
31-Jul	22	21	21	20	20	20	23	26	29	31	33	34	35	37	38	39	39	38	36	33	30	28	27	28	28	38.9	29.4



Maximum Hour//Monthly Average	41.4	28.8
Total Hours in Month	744	
Valid Hours	744	
Percent Data Captured	100.0%	

Meteorological Report
The Doe Run Company
Site Pressure

Site Name: Rivermines

Average Interval: 01 Hour

Units: mmHg

Sampling Frequency: 01 Second

2012	Hour	24 Hour																								
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1-Jul	742	742	741	742	742	743	743	743	743	744	744	744	743	743	742	742	742	742	742	743	743	743	743	743	744	743
2-Jul	743	743	743	743	743	744	744	744	744	744	745	744	744	744	743	743	744	744	744	744	744	744	744	744	745	744
3-Jul	744	744	744	743	744	744	744	744	744	744	744	744	743	743	742	742	742	741	741	742	742	742	742	744	744	743
4-Jul	742	742	743	743	743	743	744	744	744	744	744	744	744	743	743	742	742	742	742	742	742	743	743	743	744	743
5-Jul	743	743	743	743	744	744	744	744	744	744	744	744	744	743	743	742	742	742	742	742	743	743	743	743	744	743
6-Jul	743	743	743	744	744	744	744	744	744	744	744	744	744	744	744	743	742	742	742	742	743	743	744	744	744	743
7-Jul	744	744	744	744	744	744	744	744	744	744	744	744	744	743	743	742	742	742	743	743	744	744	744	744	744	744
8-Jul	743	743	744	744	744	744	744	744	744	744	744	744	744	743	743	742	742	742	743	743	744	744	745	745	745	744
9-Jul	745	745	745	744	744	745	745	745	745	745	745	745	745	744	744	744	743	743	743	743	744	744	744	745	745	744
10-Jul	744	744	744	744	744	745	745	745	745	745	745	745	745	744	744	743	743	743	743	743	744	744	744	745	745	744
11-Jul	744	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745
12-Jul	744	744	744	744	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	744
13-Jul	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745
14-Jul	745	745	745	745	745	746	746	746	746	746	746	746	746	746	746	745	745	745	745	745	746	746	746	746	746	745
15-Jul	745	745	745	746	746	747	747	747	747	747	747	747	747	746	745	745	744	744	744	744	745	745	745	745	747	746
16-Jul	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	745	744
17-Jul	743	743	743	742	743	743	743	743	744	743	743	743	742	742	742	742	741	741	741	741	742	742	742	742	742	742
18-Jul	742	742	742	742	743	743	743	743	744	743	743	743	742	742	742	742	741	741	741	742	742	743	743	743	744	742
19-Jul	742	742	742	742	742	743	743	744	743	744	744	743	743	742	742	742	741	741	741	741	742	742	742	742	744	742
20-Jul	743	743	743	743	743	743	743	744	744	744	744	744	744	744	744	744	744	744	744	744	745	745	745	745	745	744
21-Jul	745	745	745	746	746	746	746	746	747	746	746	746	746	746	746	745	745	745	745	745	745	746	746	746	747	746
22-Jul	746	746	746	746	746	746	746	746	747	747	747	747	746	746	746	745	745	745	745	745	746	746	746	746	747	746
23-Jul	746	746	746	746	747	747	747	747	747	747	748	748	748	748	748	745	745	744	744	744	745	745	745	745	747	745
24-Jul	745	744	744	744	745	745	745	745	745	745	745	745	744	744	743	742	742	741	741	741	741	742	742	742	743	743
25-Jul	742	742	742	741	742	742	742	742	742	742	741	741	740	740	739	739	739	739	738	738	738	738	739	739	739	740
26-Jul	739	739	738	739	739	740	740	740	740	740	740	740	740	739	739	739	739	739	739	739	740	740	741	742	742	740
27-Jul	742	742	742	741	742	742	742	742	743	743	743	742	742	741	741	741	741	741	741	742	743	743	744	744	745	742
28-Jul	745	745	745	745	746	746	746	746	747	747	747	747	746	746	746	745	745	746	746	746	746	746	746	746	747	746
29-Jul	748	745	746	746	746	747	747	747	747	747	747	747	746	745	744	744	743	743	743	742	742	743	743	743	747	745
30-Jul	742	742	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	742	742	742	742	742	741	741
31-Jul	742	742	742	742	743	743	743	743	743	743	743	743	743	743	743	742	741	741	741	742	742	742	742	742	743	742

		Maximum Hourly Average	747	744
		Total Hours in Month	744	744
		Valid Hours / Percent Data Captured	744	100.0%

Meteorological Report
The Doe Run Company
Precipitation

Site Name: Rivermines

Average Interval: 01 Hour
Sampling Frequency: 01 Second

2012	Hour	24 Hour																											
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max	Total	
1-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
3-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
4-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
5-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
6-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01		
7-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.54		
8-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.17	
9-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11	
10-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
12-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
13-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
15-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
16-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.14		
17-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
19-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
21-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
22-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
24-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
26-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.18		
27-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
28-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
29-Jul	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.23	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.28			
30-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
31-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
																										Maximum Hour//Monthly Total		0.54	1.44
																										Total Hours in Month		744	744
																										Valid Hours//Percent Data Captured		100.0%	100.0%